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MAR 29 1963

MEMORANDUM FOR MR. McGEORGE BUNDY
THE WHITE HOUSE

Subject: Solution of the Salinity Problem on the Lower Colorado River. Recommendations of the Department of State.

This memorandum is in response to an oral request of March 21 from Mr. Ralph Dungan for the recommendations of the Department of State on a solution to the salinity problem with Mexico on the lower Colorado River. The Department of State recommends the following interim and long term measures to solve the problem:

I. Construction Required

A. Interim

Reduction of pumping in the Wellton-Mohawk District during the winter of 1963-64 by about 40,000 acre feet.

Installation of a tile drainage works in the District to further reduce the salinity and to insure against damages due to reduction of pumping. (Estimated cost $3.3 million.)

B. Long Term

Construction of a 300 cubic second foot diversion channel which would permit the diversion of Wellton-Mohawk drainage during the five winter months to a point below Morelos Dam, and of additional wells to enable pumping of better quality wells in the summer. (Estimated cost $11 million.)

II. Operation of Works

A. An interim solution is required for the five winter months beginning on October 1, 1963. It is not possible in the intervening months to construct works that would provide adequate temporary relief. The Department of State therefore recommends that the Bureau of

Reclamation

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Reclamation review the practicability of the reduction of pumping in the District, supplemented by tile drainage works. A reduction in pumping is suggested in light of the lowering affected in the ground water table during the past eighteen months and the Department's understanding that the current rate of drainage pumping (210,000 acre feet per year) is that required for full project development of 75,000 acres, whereas for the some 60,000 acres now under irrigation, pumping of only about 170,000 acre feet annually is required. The Department believes that a reduction of 40,000 acre feet can be achieved by a 45% decrease in the rate of pumping during the winter months without a material rise in the water table that will result in waterlogging of any of the cultivated acreage. The District wells were completely shut down for about 10 days in November-December 1961 when ground water levels were considerably higher, with no serious adverse effects.

A reduction in pumping will probably be required in the equivalent of only four of the five winter months because Mexico may not need to irrigate during the other month. Resulting salinity to Mexico would be in the range of 1600 ppm to 1900 ppm depending upon the quantity of river flows. Tile drains should be installed in the possible danger spots in the District lands as suggested in the Bureau Report. Such supplemental drainage works would also enable some further reduction in salinity of waters to Mexico during the coming winter. A combination of reduction in pumping supplemented by tile drains would result in mean salinity water to Mexico at the northerly boundary in the range of 1400 to 1700 ppm depending upon the quantity of flows in the river. This would afford material interim relief to the problem.

The Bureau of Reclamation proposed the installation of additional pumps in Phase 1 of its program. The Department of State agrees that additional pumps are required as an essential part of the long term solution, but does not concur in the proposed method of operation suggested by the Bureau for either interim or permanent relief. The Bureau proposed that the highest salinity wells be pumped in summer, and the lowest in winter. Our analysis of this method of operation has convinced us that this would aggravate the problem because it would result in further serious deterioration in the quality of the water for Mexico's principal summer crop. The Department believes that the lowest salinity wells should be pumped in the summer to achieve an improvement in the quality of summer waters and that the highly saline wells should be pumped in the winter with the drainage to be diverted below Morelos Dam.

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B. A long term solution requires that measures be adopted to reduce the total salts in the drainage water of the Wellton-Mohawk District. Such a solution can be achieved wither by

1) Stopping the pumping of highly saline waters underlying the Wellton-Mohawk District and instead accomplishing drainage of the project with surface drainage works to include open or tile drains as is practiced in the nearby Yuma Valley and Imperial Valley, or

2) Reducing total quantity of salts pumped from the District to the Colorado River for diversion by Mexico, to an amount closely approaching the quantity of salts diverted to the District. This amount is required for successful irrigation in the District. Salts in excess of this amount should be disposed of elsewhere.

The Department understands that alternative 1) is not acceptable to the District primarily because of adverse effects on District lands. Estimates of the cost of installation of the tile drainage for the entire District vary, but are in the $35 to $45 million range. The Department considers this an acceptable cost only if there is no other practical way to solve the problem.

The Department considers that the more acceptable alternative is the diversion of an estimated 90,000 acre feet annually of Wellton-Mohawk drainage so that it does not mix with the reasonably good water in the river above Mexico's main diversion point, Morelos Dam.

III. Legal Issues

As a practical matter, drainage from Wellton-Mohawk in the winter is not required to fill Mexico's water schedule because winter water deliveries to Mexico now exceed Mexico's Treaty schedule by more than the amount of such drainage. This excess is a consequence, in part, of rainfall, releases from upstream dams for hydroelectric purposes, leakage at these dams, and irrigation drainage. The amount of water arriving in the limitrophe section of the Colorado River between October and February is thus 106,000 to 139,000 acre feet greater than the 1,500,000 acre feet which the United States is obligated to deliver to Mexico each year pursuant to the Mexican Treaty. Furthermore, Mexico does not credit the United States for this excess.

Inasmuch as the current winter salinity problem with Mexico arises from approximately 90,000 acre-feet of effluent from the pumps of the Wellton-Mohawk irrigation district during these same winter months, we have examined the legal consequences of diverting this 90,000 acre feet to a point below Morelos Dam.

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The Department considers that bypassing the winter drainage from the Wellton-Mohawk project down to the Gulf of California by means of the proposed bypass channel would not deprive the Wellton-Mohawk irrigation district of its right to characterize such drainage as "return flow" as that term is used in the recommended decree in Arizona v. California. The decree defines consumptive use as meaning the "diversions from the stream less such return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation." The first point is whether the term "available" applies to the clause "in satisfaction of the Mexican treaty obligation."

Prior to 1961 when the pumps at Wellton-Mohawk started to discharge drainage for delivery to the Colorado River, the amount of water arriving at the limitrophe section for delivery to Mexico was already in excess of treaty obligations of the United States. If the definition of the use of return flow included only water actually used to satisfy the Mexican treaty obligation as opposed to water available to satisfy such obligations, the necessary effect would be impairment of cultivation in Wellton-Mohawk and any other irrigation projects south of Imperial Dam. This impairment would stem from the inability of these irrigation districts to cultivate all the acreage authorized by federal law if they received water diversions from the mainstream equal only to their drainage available for downstream United States consumption or actually used in satisfaction of Mexican treaty obligations.

We cannot conceive that the recommended decree anticipates that those projects which chance to be lowest on the United States portion of the Colorado River should suffer the loss of part of their authorized acreage merely because their drainage is not needed to meet Mexican treaty requirements. As noted above, the excess quantity of waters arriving for delivery to Mexico are beyond the control of these projects. Consequently, common sense urges that "available" is applicable to "satisfaction of the Mexican Treaty obligation".

As this must be the case, we believe that the Wellton-Mohawk District may reasonably claim that any water which arrives in the limitrophe section whether through a bypass channel or from the Gila River to the Colorado River is "available in satisfaction of the Mexican Treaty obligation." Return flows are now arriving in the Colorado River below Morelos Dam which are charged against Mexico's Treaty schedule.

There is no party that we can foresee taking issue with these conclusions so far as they are addressed exclusively to waters which are not only of no value to the United States in the Colorado mainstream but, indeed, render the United States a disservice. This legal formula cannot be applied to any effluent from Wellton-Mohawk which might be pumped

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pumped out during the summer months so far as there is a need for water during these months and, if it is not supplied from irrigation drainage, it must be released from Davis Dam. Such a release from Davis Dam would be a net loss to the United States of useable water.

IV. Proposal of the Bureau of Reclamation

The Department has reviewed the study of the Bureau of Reclamation on the salinity problem on the lower Colorado River entitled "Special Studies - Delivery of Water to Mexico, February 1963."

The Bureau's stated purpose is to reduce the peak salts concentrations in water delivered to Mexico under the 1944 Water Treaty. Its proposal involves essentially a change in the delivery pattern for salts by reducing the salt concentrations in the peak winter months but increasing them in the summer. No material decrease would be achieved for many years in the total tonnage of salts delivered to Mexico from the Wellton-Mohawk District which is now discharging in its drainage water about 3.5 times the salt tonnage required for successful irrigation.

The Bureau's proposal, by decreasing the winter peak salt concentrations, would help the minor winter crop which provides less than 20% of the agricultural income in the Mexicali Valley derived from acres irrigated by Colorado River water but, by increasing the summer salt concentrations, would adversely affect the major summer crop which provides more than 80% of the income. The combined net effect would be a substantial reduction in income and hence aggravation of the problem. If the choice is between the present situation and the Bureau proposal Mexico would therefore probably prefer the present situation.

V. Recommendations

1. That the Department of the Interior discuss with the Wellton-Mohawk District a reduction of pumping for the winter of 1963-64 of 40,000 acre feet. This reduction should be coordinated with the Mexican irrigation schedule through the International Boundary and Water to achieve the maximum feasible reduction in winter salinity consistent with uses in the United States.

2. If necessary, lawyers of Justice, State and Interior should be prepared to discuss in detail with the Wellton-Mohawk Board of Directors and attorneys for the District the legal risks involved for the District and the United States unless a satisfactory solution is reached. Because our present information indicates that Mexico plans, if necessary, to press its case in the form of a suit by the Colorado River

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irrigation district of Mexico against the Wellton-Mohawk District in a U.S. Federal court, it is recommended that Justice assume responsibility for these discussions.

3. That the Department of the Interior prepare and submit legislation requesting funds to construct the works recommended above. The installation of tile drainage works should be accomplished as promptly as possible so that their operations safeguard the District lands and make a further contribution to the reduction of salinities in the winter of 1963-64.

4. That the President discuss the matter with Senator Hayden before any of the foregoing steps are taken and seek his concurrence in them.

5. That the United States Commissioner on the IBWC consult with the "Committee of Fourteen" representing the seven Basin State Governors and seek their approval of the proposed solution.

William H. Brubeck
Executive Secretary

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MAR 29 1963
A true copy of signed original

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